

as in the exemplary embodiment shown in figure 6. In this case too, the filter 44 can be provided between the microwave generator 13 and the first antenna 9a. The reflected microwaves are received by the antenna 9b and are supplied to the first input of the mixer 49 via the amplifier 47.

In this case too, the generator 41 is connected to the second microwave generator 54, which is of identical design to the first microwave generator 13, via the time delay stage 51 and the control circuit 53. The short microwave pulses output by the second microwave generator 54 are applied to the second input of the mixer 49. The further processing of the output signals from the mixer 49 tallies with the processing described previously in connection with the exemplary embodiment shown in figure 6.

**What we claim is:**

1. A level measuring instrument operating with microwaves in order to measure a level of a filled product (11) in a container (3), having
  - a microwave generator (13),
  - for producing microwaves at frequencies of greater than 40 GHz,
  - an antenna (9, 9a) which is powered by the microwave generator (13) and is used to transmit the microwaves in the direction of the filled product,
  - an antenna (9, 9b) which is used to receive microwaves reflected at a filled product surface, and
  - a reception and evaluation circuit (15)
  - which ascertains a transit time for the microwaves and uses this to determine the present level.

2. The level measuring instrument operating with microwaves as claimed in claim 1, in which the microwave generator (13) is arranged directly on the antenna (9, 9a).

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3. The level measuring instrument operating with microwaves as claimed in claim 1, in which the microwave generator (13) is connected to the antenna (9) by means of a passive waveguide (33).

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4. The level measuring instrument operating with microwaves as claimed in claim 3, in which the passive waveguide (33) is a hollow waveguide.

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5. The level measuring instrument operating with microwaves as claimed in claim 1, in which a product comprising an aperture of the antenna and a wavelength of the microwaves is much less than 500 mm<sup>2</sup>.

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6. The level measuring instrument operating with microwaves as claimed in claim 1, in which the filled product (11) is a bulk product, and in which the wavelength of the microwaves is in the order of magnitude of a mean particle size of the bulk product or is less than this particle size.

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